



UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF CALIFORNIA

BAL SEAL ENGINEERING COMPANY,  
INC., a California corporation,

Plaintiff,

v.

JAY QIANG HUANG, an individual; and  
SAINT-GOBAIN PERFORMANCE  
PLASTICS CORPORATION, a California  
corporation,

Defendants.

Civil No. 10cv819-CAB

**CLAIM CONSTRUCTION ORDER FOR US  
PATENTS NOS. 5,082,390; 5,411,348; AND  
5,545,842**

Before the Court are the parties' joint motions for claim construction for U.S. Patents Nos. 5,082,390 ("the '390 Patent "); 5,411,348 ("the '348 Patent"); and 5,545,842 ("the '842 Patent").<sup>1</sup> Pursuant to the Patent Local Rules and this Court's scheduling order, the plaintiff Bal Seal Engineering Co., Inc., and defendants Jay Quiang Huang and Saint-Gobain Performance Plastics Corp., submitted opening and responsive briefs and Joint Claim Construction Charts regarding the proposed constructions for certain terms and phrases of these patents. The Court held a claim construction hearing on March 25, 2011.

The purpose of a claim construction hearing is to resolve "disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement." *U.S. Surgical Corp. V. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir.

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<sup>1</sup>An order construing the terms at issue in U.S. Patent 5,160,122 will issue separately.

1 1997). District courts are not required to construe every limitation present in the patent's asserted  
2 claims. *02 Micro Intern, Ltd. v. Beyond Innovation Technology Co., Ltd.*, 521 F.3d 1351, 1362 (Fed.  
3 Cir. 2008). "When the parties present a fundamental dispute regarding the scope of a claim term, it is the  
4 court's duty to resolve it." *Id.*

5 The parties identified Claims 1, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17 and 18 of the '390 Patent as  
6 at issue in this litigation and presented certain limitations of those claims for construction. Claims 1, 2,  
7 9 and 10 of the '348 Patent were identified as at issue in this litigation and certain limitations of those  
8 claims were presented for construction. Claims 1, 2, 10 and 11 of the '842 Patent were identified as at  
9 issue in this litigation and certain limitations of those claims were presented for construction.

10 Having considered the submissions of the parties and the arguments of counsel, the Court  
11 construes the limitations at issue as set forth in the attachment to this Order.

12 **IT IS SO ORDERED.**

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14 Dated: 7/15/11

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16 **CATHY ANN BENCIVENGO**  
17 United States Magistrate Judge  
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**Attachment**

Claim Construction for  
U.S. Patent No. 5,082,390  
U.S. Patent No. 5,411,348  
and  
U.S. Patent No. 5,545,842

Claim Construction  
for U.S. Patent 5,082,390

Claim 1. *Locking mechanism comprising:*

*a garter-type canted-coil spring having elliptical coils with a **coil height** and a **coil width** measured, respectively along a **minor** and a **major axis** of the elliptical coils;*

*a first member including **means defining a first groove for retaining the spring**, said first groove having a depth less than the coil width in order that a portion of each coil extends outwardly from the first groove;*

*a second member including **means defining a second groove for accepting the extended portion of each coil and for loading the coils generally along the major axis thereof**, said first and second members being locked to one another when the coils are disposed within and loaded by the first and second grooves.*

Terms for Construction

**Coil Height**

Court adopts the parties' joint construction of **coil height** as

The length of the elliptical coils along the minor axis. (See Fig. 4a; Col. 3, lines 10-12.)

**Coil Width**

Court adopts the parties' joint construction of **coil width** as

The length of the elliptical coils along the major axis. (See Fig. 4a; Col. 3, lines 10-12.)

**Minor Axis**

Court adopts the parties' joint construction of **minor axis** as

The short axis of the elliptical coils. (See Fig. 4a; Col. 3, lines 10-12.)

**Major Axis**

Court adopts the parties' joint construction of **major axis** as

The long axis of the elliptical coils. (See Fig. 4a; Col. 3, lines 10-12.)

**Means defining a first groove for retaining the spring**

The Court interprets this claim language in accordance with 35 U.S.C. §112, paragraph 6 ("section 112(6)"), which states: An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof ("means-plus-function claim"). *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d, 1533, 1536 (Fed. Cir. 1991). A claim limitation that actually uses the word "means" will invoke a rebuttable presumption that 112(6)

applies. *Personalized Media Comm'n, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 703-04 (Fed. Cir. 1998). (“Means-plus-function claim.”) Claim 1 uses the word “means” for defining a first groove. Both parties agree the rules of section 112(6) apply.

“The construction of a means-plus-function limitation includes two steps. First, [the court determines] the claimed function. Second, [the court identifies] the corresponding structure in the written description that performs that function.” *JVW Enterprises, Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1330 (Fed. Cir. 2004). The function of the first groove means is to retain the spring generally along its minor axis when the spring is assembled into the first member.

The Court looks to the specification for the corresponding structure. The patent figures illustrate and the written descriptions identify, the first groove means as an indentation in the first member with two sidewalls of a width such that the spring is retained generally on its minor axis when disposed in the first groove, but may allow the major axis of the coil to vary off the first groove’s center line. The indentation has a bottom wall such that the depth of the indentation is sufficient to retain the spring, but less than the coil width (major axis) of the spring, so that a portion of each coil extends outwardly from the indentation. See Col. 1, lines 42-46; Col. 2, lines 4-7, 13-18; Figs. 1 and 2, and Col. 3, lines 12-17; Fig. 3, and Col. 3, lines 23-25; Figs. 5a-c, and Col. 3, lines 43-61; Figs. 6a-c, and Col. 3, lines 62-67; Figs. 7a-c, and Col. 4, lines 1-5; Figs. 8 a-c, and Col. 4, lines 34-41; Fig. 9, and Col. 4, lines 46-48; Figs. 10a-d, and Col. 4, lines 60-65 and Col. 5, lines 1-4, 37-40.

The language of Claim 1 includes the specific structural recitation that the first groove means have “a depth less than the coil width in order that a portion of each coil extends outwardly from the first groove.” This limitation of Claim 1 is consistent with all the corresponding structures for the first groove means depicted in the specification, each showing and describing a depth of the indentation such that a portion of each coil extends outwardly from the indentation. The recitation of some structure in a means-plus-function element does not preclude the applicability of section 112(6). *Laitram Corp.*, 939 F.2d at 1536.

The Court finds that section 112(6) applies and the **means defining a first groove for retaining the spring** is defined as

An indentation in the first member with two sidewalls and a bottom wall, the depth of the indentation such that a spring disposed in the space is retained, the width of the indentation such that the spring is retained generally on its minor axis but may allow the major axis of the spring to vary off the center line of the indentation, and equivalents thereof.

**Means defining a second groove for accepting the extended portion of each coil and for loading the coils generally along the major axis thereof**

Claim 1 uses the word “means” for defining a second groove. Both parties agree the rules of section 112(6) apply. The function of the second groove means in the second member is to accept the portion of each coil extending from the first groove means in the first member and load the coils generally along the major axis of the spring when the members are in the locked position.

The Court looks to the specification for the corresponding structure(s). The patent figures illustrate and the written descriptions identify the second groove means as an indentation in the second member of a depth such that the indentation can accept the portion of the coil width of the spring that extends outwardly from the first groove means. The width of the indentation is such that the spring is generally loaded on its major axis when the members are in the locked position. See Col. 1, lines 47-50; Col. 2, lines 8-12, 18-24; Figs. 1 and 2, and Col. 3, lines 17-21; Fig. 3, and Col. 3, lines 26-27; Figs. 5a-c, and Col. 3, lines 43-61; Figs. 6a-c, and Col. 3, lines 62-67; Figs. 7a-c, and Col. 4, lines 14- 33; Figs. 8a-c, and Col 4, lines 34-41; Fig. 9, and Col. 4, lines 49-51; Figs. 10a-d, and Col. 4, lines 59-64 and Col. 5, lines 11-13.

The Court finds that section 112(6) applies and the **means defining a second groove for accepting the extended portion of each coil and for loading the coils generally along the major axis thereof** is defined as

An indentation in the second member which has a depth and width that enables it to accept the extended portion of each coil of the spring disposed in the first groove means, and generally load the spring on its major axis when the first and second members are in the locked position, and equivalents thereof.

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Claim 4. *Locking mechanism according to claim 1 wherein the first groove has a width at the most equal to the **coil height**.*

Terms for Construction

**Coil Height**

Court adopts the parties’ joint construction of **coil height** as

The length of the elliptical coils along the minor axis. (See Fig. 4a; Col. 3, lines 10-12.)

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Claim 5. *Locking mechanism according to claim 1 wherein the first groove has a width greater than the coil height.*

Terms for Construction

**Coil Height**

Court adopts the parties' joint construction of **coil height** as

The length of the elliptical coils along the minor axis. (See Fig. 4a; Col. 3, lines 10-12.)

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Claim 6. *The locking mechanism according to claim 4 wherein said means defining a second groove includes means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another.*

Terms for Construction

**Means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another**

Court adopts the parties' joint construction of **means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another** as

A structure with at least one side wall that is ramped or tapered relative to the surface of the second member, and equivalents thereof. (Figs. 7a-c; Col. 4, lines 18-22; Fig. 9; Col. 46-59.)

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Claim 7. *The locking mechanism according to claim 5 wherein said means defining a second groove includes means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another.*

Terms for Construction

**Means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another**

Court adopts the parties' joint construction of **means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another** as

A structure with at least one side wall that is ramped or tapered relative to the surface of the second member, and equivalents thereof. (Figs. 7a-c; Col. 4, lines 18-22; Fig. 9; Col. 46-59.)

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Claim 8. *The locking mechanism according to claim 5 wherein said means defining a first groove includes means, defining tapered side walls of the first groove, for retaining the spring in said first groove.*

Terms for Construction

**Means, defining tapered side walls of the first groove, for retaining the spring in said first groove**

Claim 8 uses the word “means” for further defining the structure of the first groove means. Both parties agree the rules of section 112(6) apply. The function of the first groove means in the first member is to retain the spring generally along its minor axis when the spring is assembled into the first member. The function of the means that defines tapered side walls of the first groove structure according to the specification is to “further retain the spring within the groove.” Col. 5, lines 37-38.

The Court looks to the specification for the corresponding structure. Patent Fig. 10d and the written description at Col. 5, lines 37-40, identify the corresponding structure for this claim. The indentation in the first member that constitutes the first groove, has angled sidewalls, such that the width of the indentation at the bottom is greater than the width of the indentation at the surface of the first member from which the coils extend. This is accomplished by tapering the sidewalls inwardly from bottom to top. The specification indicates that the preferred angle of the taper to be 0 to 1 degree. No other tapered means is disclosed for retaining the spring in the first groove.

The Court finds that section 112(6) applies and the **means, defining tapered side walls of the first groove, for retaining the spring** is defined as

An indentation in the first member with a width at the bottom greater than the width at the surface of the first member from which the coils extend, accomplished by tapering the sidewalls of the indentation inwardly from bottom to surface, and equivalents thereof.

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Claim 9. *The locking mechanism according to claim 1 wherein said means defining a first groove includes means, defining a first groove width, for varying an angular disposition of the coil major axis with respect to a first groove center line in order to determine the force required to unlock the first and second members from one another.*

Terms for Construction

**Means, defining a first groove width, for varying an angular disposition of the coil major axis with respect to a first groove center line in order to determine the force required to unlock the first and second members from one another**



Claim 9 uses the word “means” for defining a first groove width. Both parties agree the rules of section 112(6) apply. The function of the means defining a first groove width is to vary the angular disposition of the coil’s major axis with respect to a first groove center line in order to determine the force required to unlock the first and second members from one another.

The Court looks to the specification for the corresponding structure. The patent figures illustrate and the written descriptions identify means for defining a first groove width such that the spring while still generally retained on its minor axis when disposed in the first groove, may allow the major axis of the coil to vary off the first groove’s center line, preferably between 20 and 45 degrees. See Col. 2, lines 13-18; Fig. 4b, and Col. 3, lines 34-39; Figs. 7a-c, and Col. 4, lines 1-10; Figs. 8a-c, and Col 4, lines 34-45; Figs. 10a and 10c, and Col. 5, lines 7-8, 15-16, 19-21, 24-31.

The Court finds that section 112(6) applies and the **means, defining a first groove width, for varying an angular disposition of the coil major axis with respect to a first groove center line in order to determine the force required to unlock the first and second members from one another** is defined as

An indentation in the first member with a width greater than coil height (minor axis) such that the angle of coil major axis may vary off the first groove’s center line while still retaining the spring between the indentation side walls generally on its minor axis, and equivalents thereof.

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Claim 10. *The locking mechanism according to claim 9 wherein said means defining a second groove includes means, defining side walls of the second groove, for determining, in concert with said means defining a first groove width, the force required to unlock the first and second members from one another.*

#### Terms for Construction

**Means, defining side walls of the second groove, for determining, in concert with said means defining a first groove width, the force required to unlock the first and second members from one another**

Court adopts the parties’ joint construction of **means, defining side walls of the second groove, for determining, in concert with said means defining a first groove width, the force required to unlock the first and second members from one another** as

A structure with two side walls, at least one of which is ramped or tapered relative to the surface of the second member, and equivalents thereof. (Figs. 7a-c; Col. 4, lines 18-29.)

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Claim 11. *Locking mechanism comprising:*

*a garter-type canted-coil spring having elliptical coils with a **coil height** and a **coil width** measured, respectively along a **minor** and a **major axis** of the elliptical coils;*

*a first member including **means defining a first groove for retaining the spring, and orienting the coils so that the coil major axis is disposed at an acute angle with a normal to the first member surface**, said first groove having a depth less than the coil width in order that a portion of each coil extends outwardly from the first groove;*

*a second member including **means defining a second groove for accepting the extended portion of each coil and for loading the coils generally along the major axis thereof, and cooperating with the coil orientation to enable the first and second members to be unlocked from one another when moved in one direction with respect to one another and preventing unlocking of the first and second members along an opposite direction.***

#### Terms for Construction

##### **Coil Height**

Court adopts the parties' joint construction of **coil height** as

The length of the elliptical coils along the minor axis. (See Fig. 4a; Col. 3, lines 10-12.)

##### **Coil Width**

Court adopts the parties' joint construction of **coil width** as

The length of the elliptical coils along the major axis. (See Fig. 4a; Col. 3, lines 10-12.)

##### **Minor Axis**

Court adopts the parties' joint construction of **minor axis** as

The short axis of the elliptical coils. (See Fig. 4a; Col. 3, lines 10-12.)

##### **Major Axis**

Court adopts the parties' joint construction of **major axis** as

The long axis of the elliptical coils. (See Fig. 4a; Col. 3, lines 10-12.)

##### **Means defining a first groove for retaining the spring, and orienting the coils so that the coil major axis is disposed at an acute angle with a normal to the first member surface**

Claim 11 uses the word "means" for defining a first groove. Both parties agree the rules of section 112(6) apply. The function of the first groove means is to retain the spring generally along its minor axis when the spring is assembled into the first member and in a position such that the coil major axis is at an acute angle to the normal of the surface of the first member.

The Court looks to the specification for the corresponding structure(s). The ordinary meaning of an "acute" angle is an angle between 0 and 90 degrees. *See American Heritage Science Dictionary* (2002). Figures 7a-c, 8a-c, 10a and 10c illustrate a first member with a spring retained within an

indentation having two side walls and a bottom wall, such that the coil major axis is at an acute angle, greater than 0 degrees and less than 90 degrees to a line normal (perpendicular) to the surface of the first member. None of these corresponding structures, however, illustrates, nor does the written description provide for the angle of the coil major axis to be in excess of about 45 degrees from a line normal to the surface of the first member, the preferred outer range of the angle orientation. See Col. 5, lines 29-31.

The patent distinguishes itself over prior art because the locking mechanism of the invention loads along the major axis of the coils. See Col. 1, lines 50-57. The coils do not have to be loaded between the first and second members directly along the major axis, but the coils must be oriented so that the spring generally loads along the major axis. An orientation of the coil major axis beyond 45 degrees but less than 90 degrees is at an acute angle, however, a spring disposed in the first groove at an orientation exceeding about 45 degrees becomes generally retained in the groove along the major axis and will load generally along the minor axis as described in the prior art. Consequently, within the scope of this patent, the first groove means is limited to a structure that orients the major axis coils at a maximum of about 45 degrees off the normal to the first member surface, as depicted in the corresponding structures of the patent, and does not encompass the full range that comes within the ordinary meaning of an acute angle.

The language of Claim 11 includes the specific structural recitation that the first groove means have “a depth less than the coil width in order that a portion of each coil extends outwardly from the first groove.” This limitation of Claim 11 is consistent with the corresponding structures for the first groove means depicted in the specification, each showing and describing a depth of the indentation such that a portion of each coil extends outwardly from the indentation. The recitation of some structure in a means plus function element does not preclude the applicability of section 112(6). *Laitram Corp.*, 939 F.2d at 1536.

The Court finds that section 112(6) applies and the **means defining a first groove for retaining the spring and orienting the coils so that the coil major axis is disposed at an acute angle with a normal to the first member surface** is defined as

An indentation in the first member with two sidewalls and a bottom wall, the depth of the indentation such that a spring disposed in the space is retained, the width of the indentation such that the spring while retained generally on its minor axis is oriented such that the major axis of the spring is angled off the normal to the first member surface not greater than about 45 degrees, and equivalents thereof.

**Means defining a second groove for accepting the extended portion of each coil and for loading the coils generally along the major axis thereof and cooperating with the coil orientation to enable the first and second members to be unlocked from one another when moved in one direction with respect to one another and preventing unlocking of the first and second members along an opposite direction**

Claim 11 uses the word “means” for defining a second groove. Both parties agree the rules of section 112(6) apply. The function of the second groove means in the second member is to accept the portion of each coil extending from the first groove means in the first member and load the coils generally along the major axis of the spring and to cooperate with the coil orientation so that the first and second member unlock when moved in one direction but not the other direction. on.

The Court looks to the specification for the corresponding structure. Patent Figures 7a-c and 9 illustrate a second groove means that performs this function. The indentation in the second member has one side wall that is a right angle shoulder and a second side wall that is a ramp shoulder that permits unlocking one direction and prohibits unlocking in the other direction. See Figs. 7a-c, and Col. 4, lines 14- 33; Fig. 9, and Col. 4, lines 51-59.

The Court finds that section 112(6) applies and the **means defining a second groove for accepting the extended portion of each coil and for loading the coils generally along the major axis thereof and cooperating with the coil orientation to enable the first and second members to be unlocked from one another when moved in one direction with respect to one another and preventing unlocking of the first and second members along an opposite direction** is defined as

An indentation in the second member with a side wall that is a right angle shoulder and a second sidewall that is a ramp shoulder and has a depth and width that enables it to accept the extended portion of each coil of the spring disposed in the first groove means, and generally load the spring on its major axis when the first and second members are in the locked position, and equivalents thereof.

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Claim 14. *Locking mechanism according to claim 11 wherein the first groove has a width greater than the coil height.*

#### Terms for Construction

##### **Coil Height**

Court adopts the parties’ joint construction of **coil height** as

The length of the elliptical coils along the minor axis. (See Fig. 4a; Col. 3, lines 10-12.)

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Claim 15. *The locking mechanism according to claim 14 wherein said means defining a second groove includes means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another.*

Terms for Construction

**Means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another**

Court adopts the parties' joint construction of **means, defining side walls of the second groove, for determining the force required to unlock the first and second members from one another** as

A structure with at least one side wall that is ramped or tapered relative to the surface of the second member, and equivalents thereof. (Figs. 7a-c; Col. 4, lines 18-22; Fig. 9; Col. 46-59.)

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Claim 16. *The locking mechanism according to claim 14 wherein said means defining a first groove includes means, defining tapered side walls of the first groove, for retaining the spring in said first groove.*

Terms for Construction

**Means, defining tapered side walls of the first groove, for retaining the spring in said first groove**

Claim 16 uses the word "means" for further defining the structure of the first groove means. Both parties agree the rules of section 112(6) apply. The function of the first groove means in the first member is to retain the spring generally along its minor axis when the spring is assembled into the first member. The function of the means that defines tapered side walls of the first groove structure according to the specification is to "further retain the spring within the groove." Col. 5, lines 37-38.

The Court looks to the specification for the corresponding structure. Patent Fig. 10d and the written description at Col. 5, lines 37-40, identify the corresponding structure for this claim. The indentation in the first member that constitutes the first groove, has angled sidewalls, such that the width of the indentation at the bottom is greater than the width of the indentation at the surface of the first member from which the coils extend. This is accomplished by tapering the sidewalls inwardly from bottom to top. The specification indicates that the preferred angle of the taper to be 0 to 1 degree. No other tapered means is disclosed for retaining the spring in the first groove.



The Court finds that section 112(6) applies and the **means, defining tapered side walls of the first groove, for retaining the spring** is defined as

An indentation in the first member with a width at the bottom greater than the width at the surface of the first member from which the coils extend accomplished by tapering the sidewalls of the indentation inwardly from bottom to surface, and equivalents thereof.

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Claim 17. *The locking mechanism according to claim 11 wherein said means defining a first groove includes **means, defining a first groove width, for varying the acute angle in order to determine the force required to unlock the first and second members from one another.***

Terms for Construction

**Means, defining a first groove width, for varying the acute angle in order to determine the force required to unlock the first and second members from one another**

Claim 17 uses the word “means” for defining a first groove width. Both parties agree the rules of section 112(6) apply. The function of the means defining a first groove width is to vary the acute angular disposition of the coil’s major axis with respect to a normal of the first member surface in order to determine the force required to unlock the first and second members from one another.

The Court looks to the specification for the corresponding structure. The patent figures illustrate and the written descriptions identify means for defining a first groove width such that the spring while still generally retained on its minor axis when disposed in the first groove, may allow the major axis of the coil to vary off a normal to the first member’s surface, preferably between 20 and 45 degrees. See Col. 2, lines 13-18; Fig. 4b, and Col. 3, lines 34-39; Figs. 7a-c, and Col. 4, lines 1-10; Figs. 8a-c, and Col 4, lines 34-45; Figs. 10a and 10c, and Col. 5, lines 7-8, 15-16, 19-21, 24-31. As discussed above, although an orientation beyond 45 degrees but less than 90 degrees would still be at an acute angle, a spring disposed in the first groove at an orientation exceeding about 45 degrees becomes generally retained in the groove along the major axis and will load generally along the minor axis as described in the prior art. Consequently, the first groove means within the scope of this patent is be limited to a structure with a width that orients the major axis coils at a maximum of about 45 degrees off a normal of the first member surface, as depicted in the patent, and does not encompass the full range that comes within the ordinary meaning of an acute angle.

The Court finds that section 112(6) applies and the **means, defining a first groove width, for varying the acute angle in order to determine the force required to unlock the first and second members from one another** is defined as

An indentation in the first member with a width greater than coil height (minor axis) such that the coil major axis is angled off a normal of the first member surface not greater than about 45 degrees, and equivalents thereof.

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Claim 18. *The locking mechanism according to claim 12 wherein said means defining a second groove includes means, defining side walls of the second groove, for determining, in concert with said means defining a first groove width, the force required to unlock the first and second members from one another.*

Terms for Construction

**Means, defining side walls of the second groove, for determining, in concert with said means defining a first groove width, the force required to unlock the first and second members from one another**

Court adopts the parties' joint construction of a structure with two side walls, at least one of which is ramped or tapered relative to the surface of the second member, and equivalents thereof. (Figs. 7a-c; Col. 4, lines 18-29.)



Claim Construction  
for U.S. Patent No. 5,411,348

Claim 1. *A connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing, the mechanism comprising:*

*a body having a groove therein with **generally parallel** side walls;*

*a coil spring disposed in said groove with a portion thereof protruding from said groove;*

*a housing having a means, defining an opening for accommodating said body and **groove means, disposed in an inside surface of said opening, for receiving the protruding spring portion and for enabling assembly of the body within the opening when the body and housing are moved in one direction with respect to one another; and***

***means, defining a tapered bottom in said groove, said tapered bottom being tapered with respect to the side walls, for preventing the spring from turning past a vertical line when the body and housing are moved in another direction with respect to one another in order to prevent disassembly of the body and housing.***

Terms for Construction

**A connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing**

The parties disagree as to whether the preamble of Claim 1 is a limitation on the claimed invention. Plaintiff argues that the preamble language **a connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing** is only used to state a purpose or intended use for the mechanism claimed in the invention and the structurally complete invention is defined in the body of the claim. This language is therefore not a limitation. *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997).

Defendants argue that the preamble, specifically the words **for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing** are an important aspect of the invention as these uses are referenced throughout the patent and therefore constitute a claim limitation. Further, defendants argue that dependent claims refer back to the preamble using comparative language so the language is essential to understand limitations or terms in the claim body, and therefore limits the claim scope. *Catalina Mkt. Int'l v. Coolsavings*, 289 F.3d 801, 808 (Fed. Cir. 2002).

There is no litmus test with respect to when the introductory words of a claim, the preamble, constitute a statement of purpose for a device or are, in themselves, additional structural limitations of a claim. The effect preamble language should be given can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim. *Corning Glass Works v. Sumitomo Electric U.S.A.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989).

In determining whether the preamble is a separate limitation, the Court must determine if it recites essential structure, or if it is necessary to give life, meaning, and vitality to the claim. The preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention. The Federal Circuit has provided certain “guideposts” to aid in determining whether a preamble should be given limiting weight. *Symantec Corp., v. Computer Assoc. Int’l, Inc.*, 522 F.3d 1279, 1288 (Fed. Cir. 2008), citing *Catalina*, 289 F.3d at 808.

Preambles describing the use of an invention generally do not limit the claims because the patentability of an apparatus claim depends on the claimed structure not on the use or purpose of that structure. “Statements of intended use or asserted benefits in the preamble may, in rare instances, limit apparatus claims, but only if the applicant clearly and unmistakably relied on those uses or benefits to distinguish prior art.” *Catalina*, 289 F.3d at 809; *Symantec*, 522 F.3d at 1288 (clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention).

The patent specification discusses uses for the mechanism claimed in the invention and represents that the mechanism is “suitable for many mechanical and electrical applications.” Col. 1, lines 27-28. It sets forth various configurations that may enhance environmental sealing, such as the use of an elastomer. Col. 1, lines 32-34, Col. 6, line 65-68. Varying the coil size is also referenced to increase magnetic shielding, electrical conductivity, thermal dissipation and environmental sealing. Col. 2, lines 12-17, Col. 5, lines 44-50; Col. 6, lines 35-40. Overall, the patent represents that the claimed mechanism, in some of its configurations, may effect electromagnetic shielding, electrical conductivity, heat dissipation or environmental sealing, or a combination of them, Col. 7, lines 10-28, but the patent does not assert that the suitability of the mechanism for these applications is what distinguishes it over prior art.

Nor in this case is there any evidence that during the prosecution of the ‘348 Patent, the preamble was relied upon to distinguish the claimed invention from prior art. Without such reliance, a preamble generally is not limiting when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention. *Catalina*, 289 F.3d at 808. Claim 1 describes a mechanism for joining two surfaces utilizing a coil spring. The deletion of the preamble phrase regarding suitable uses of that mechanism does not affect the claimed structure.

Dependent Claim 6, claims *the mechanism according to claim 1 wherein said coil spring includes coils sized for causing adjacent coils to abut one another upon assembly of the body within the opening in order to increase electromagnetic shielding, electrical conductivity, thermal dissipation and environmental sealing between the body and the housing*. Defendant claims that because this claim refers back to the preamble reference to applications for the mechanism, using comparative language (“in order to increase”), the preamble is essential to understand this limitation. The Court disagrees. Claim 6 provides a further limitation of the mechanism described in Claim 1 with regard to the structure of the claimed coil spring. The inclusion of language describing the purpose for the added element is understandable without reference to the preamble of Claim 1. In other words if the preamble phrase in Claim 1, was deleted, dependent Claim 6 would still be complete and understandable.

Based on review of the entirety of the patent, the Court concludes that the preamble of Claim 1 is statement of purpose or intended use and is not a limitation and does not require construction.

#### **Generally parallel**

The parties agree that parallel has its ordinary meaning, and that generally means “for the most part.” The Court defines **generally parallel** as

For the most part, extending in the same direction, equidistant at all points.

#### **Groove means, disposed in an inside surface of said opening, for receiving the protruding spring portion and for enabling assembly of the body within the opening when the body and housing are moved in the one direction with respect to one another**

Claim 1 uses the word “means” for defining a groove in the opening of the housing. Both parties agree that rules of section 112(6) apply. The function of the groove means inside the opening in the housing is to receive the protruding portion of the spring disposed in the groove of the body and to enable assembly of the body in the opening of the housing when the body and housing are moved in one direction.

The Court looks to the specification for the corresponding structure(s). The patent figures illustrate and the written descriptions identify this groove means as a structure inside the surface of the opening in the housing for receiving the protruding spring portion and enabling assembly of the body within the opening, with two side walls and a bottom wall. See Figs. 5a-c, and Col. 3, lines 61-66; Figs. 7a-d, and Col. 4, lines 57-64; Figs. 9a-d, Col. 5, lines 4-21.

Court adopts the parties’ joint construction of **groove means, disposed in an inside surface of said opening, for receiving the protruding spring portion and for enabling assembly of the body within the opening when the body and housing are moved in the one direction with respect to one another** as

An indentation with two side walls and a bottom located there between having a width and a depth, disposed in an inside surface of the opening in the housing, and equivalents thereof.

**Means, defining a tapered bottom in said groove, said tapered bottom being tapered with respect to the side walls, for preventing the spring from turning past a vertical line when the body and housing are moved in another direction with respect to one another in order to prevent disassembly of the body and housing**

Claim 1 uses the word “means” for defining the bottom of the groove relative to the side walls of the groove in the body. Both parties agree that rules of section 112(6) apply. The function of the tapering means is to provide a groove bottom such that the spring disposed in the groove will not turn past a vertical line in the groove when pressure is applied from one direction so as to prevent the disassembly of the body and the housing.

The Court looks to the specification for the corresponding structure(s). The patent figures illustrate and the written descriptions identify a bottom wall with respect to the side walls that is angled, such that the depth of the groove is not uniform between the walls. See Figs. 5a-c, and Col. 4, lines 6-12, 25-34; Figs. 7a-d, and Col. 4, lines 59-60; Figs. 8a-c, Col. 4, line 65 – Col. 5, line 1; Figs. 9a-d, Col. 5, lines 4-21, Figs. 10 a-d, Col. 5, lines 30-34, 53-57; Figs. 11-14, and Col. 6, lines 1-9, 21-22.

The Court finds that section 112(6) applies and **means, defining a tapered bottom in said groove, said tapered bottom being tapered with respect to the side walls, for preventing the spring from turning past a vertical line when the body and housing are moved in another direction with respect to one another in order to prevent disassembly of the body and housing** is defined as

A bottom wall of the groove in which the spring is disposed, such that the bottom wall with respect to the side walls of the groove is angled, such that the depth of the groove is not uniform between the walls, and equivalents thereof.

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Claim 2. *The mechanism according to claim 1 wherein the groove has a groove width which is smaller than a coil height of the spring.*

#### Terms for Construction

##### **Coil height**

Court adopts the parties’ joint construction of **coil height** as

The length of the short dimension of the spring.

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Claim 9. *A connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing, the mechanism comprising:*

*a housing including means defining an opening therein having a groove therein with generally parallel side walls;*

*a coil spring disposed in said groove with a portion thereof protruding from said groove;*

*a body sized for insertion into said opening and groove means, disposed on an outside surface of said body, for receiving the protruding spring portion and for enabling assembly of the body within the opening when the body and housing are moved in one direction with respect to one another; and*

*means, defining a tapered bottom in said groove, said tapered bottom being tapered with respect to the side walls, for preventing the spring from turning past a vertical line when the body and housing are moved in another direction with respect to one another in order to prevent disassembly of the body and housing.*

#### Terms for Construction

**A connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing**

For the reasons set forth above with respect to Claim 1, the Court concludes that the preamble of Claim 9 is statement of purpose or intended use and is not a limitation and does not require construction.

#### **Generally parallel**

The parties agree that parallel has its ordinary meaning, and that generally means “for the most part.” The Court defines **generally parallel** as

For the most part, extending in the same direction, equidistant at all points.

**Groove means, disposed on an outside surface of said body, for receiving the protruding spring portion and for enabling assembly of the body within the opening when the body and housing are moved in one direction with respect to one another**

Claim 9 uses the word “means” for defining a groove on the outside surface of the body. Both parties agree that rules of section 112(6) apply. The function of the groove means on the outside of the body is to receive the protruding portion of the spring disposed in the groove in the housing and to enable assembly of the body in the opening of the housing when the body and housing are moved in one direction.



The Court looks to the specification for the corresponding structure(s). The patent figures illustrate and the written descriptions identify this groove means as an indentation on the surface of the body for receiving the protruding spring portion and enabling assembly of the body within the opening. See Figs. 6a-c, and Col. 3, lines 35-44.

The Court finds that section 112(6) applies and adopts the parties' joint construction of **groove means, disposed in an outside surface of said body, for receiving the protruding spring portion and for enabling assembly of the body within the opening when the body and housing are moved in the one direction with respect to one another as**

An indentation with two side walls and a bottom located there between having a width and a depth, disposed in an outside surface of the body, and equivalents thereof.

**Means, defining a tapered bottom in said groove, said tapered bottom being tapered with respect to the side walls, for preventing the spring from turning past a vertical line when the body and housing are moved in another direction with respect to one another in order to prevent disassembly of the body and housing**

Claim 9 uses the word "means" for defining the bottom of the groove relative to the side walls of the groove in the housing. Both parties agree that rules of section 112(6) apply. The function of the tapering means is to provide a groove bottom such that the spring disposed in the groove will not turn past a vertical line in the groove when pressure is applied from one direction so as to prevent the disassembly of the body and the housing.

The Court looks to the specification for the corresponding structure(s). The patent figures illustrate and the written descriptions identify a bottom wall with respect to the side walls of the groove that is at an angle, such that the depth of the groove is not uniform between the walls. See Figs. 6 a-c, and Col. 4, lines 45-56.

The Court finds that section 112(6) applies and **means, defining a tapered bottom in said groove, said tapered bottom being tapered with respect to the side walls, for preventing the spring from turning past a vertical line when the body and housing are moved in another direction with respect to one another in order to prevent disassembly of the body and housing** is defined as

A bottom wall of the groove in which the spring is disposed, such that the bottom with respect to the side walls of the groove is angled, such that the depth of the groove is not uniform between the walls, and equivalents thereof.

\*\*\*\*\*

Claim 10. *The mechanism according to claim 9 wherein the groove has a groove width which is smaller than a **coil height** of the spring.*

Terms for Construction

**Coil height**

Court adopts the parties' joint construction of **coil height** as  
The length of the short dimension of the spring.



Claim Construction  
for U.S. Patent No. 5,545,842

Claim 1. *A connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing, the mechanism comprising:*

*a cylindrical body having a circumferential groove means there with generally parallel side walls;*

*a continuous coil spring disposed in said circumferential groove means with a portion thereof protruding from said circumferential groove means;*

*a housing having a bore therein sized to accommodate said cylindrical body and groove means, disposed in an inside surface of said bore, for receiving the protruding spring portion and for enabling assembly of the cylindrical body within the bore when the cylindrical body and housing are moved in one direction with respect to one another; and*

*means, defining a tapered bottom in said circumferential groove means, for preventing the spring from turning past a vertical line when the cylindrical body and housing are moved in another direction with respect to one another in order to prevent disassembly of the cylindrical body and housing.*

Terms for Construction

**A connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing**

The parties disagree as to whether the preamble of Claim 1 is a limitation on the claimed invention. Plaintiff argues that the preamble language **a connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing** is only used to state a purpose or intended use for the mechanism claimed in the invention and the structurally complete invention is defined in the body of the claim. This language is therefore not a limitation.

Defendants argue that the preamble, specifically the words **for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing** are an important aspect of the invention as these uses are referenced throughout the patent and therefore constitute a claim limitation. Further, defendants argue that dependent claims refer back to the preamble using comparative language so the language is essential to understand limitations or terms in the claim body, and therefore limits the claim scope.

As discussed with regard to the '348 Patent, above, in determining whether the preamble is a separate limitation, the Court must determine if it recites essential structure, or if it is necessary to give life, meaning, and vitality to the claim. The preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.

Preambles describing the use of an invention generally do not limit the claims because the patentability of an apparatus claim depends on the claimed structure not on the use or purpose of that structure. "Statements of intended use or asserted benefits in the preamble may, in rare instances, limit apparatus claims, but only if the applicant clearly and unmistakably relied on those uses or benefits to distinguish prior art." *Catalina*, 289 F.3d at 809.

The patent specification discusses uses for the mechanism claimed in the invention and represents that the mechanism is "suitable for many mechanical and electrical applications." Col. 1, lines 29-30. It sets forth various configurations that may enhance environmental sealing, such as the use of an elastomer. Col. 1, lines 33-36; Col. 2, lines 23-25; Col. 7, line 9-12. Varying the coil size is also referenced to increase magnetic shielding, electrical conductivity, thermal dissipation and environmental sealing. Col. 2, lines 17-22; Col. 6, lines 29-35. Overall, the patent represents that the claimed mechanism, in some of its configurations, may effect electromagnetic shielding, electrical conductivity, heat dissipation or environmental sealing, or a combination of them, but the patent does not assert that the suitability of the mechanism for these applications is what distinguishes it over prior art.

Nor in this case is there any evidence that during the prosecution of the '842 Patent, the preamble was relied upon to distinguish the claimed invention from prior art. Without such reliance, a preamble generally is not limiting when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention. *Catalina*, 289 F.3d at 808. Claim 1 describes a mechanism for joining a cylindrical body and housing utilizing a coil spring. The deletion of the preamble phrase regarding suitable uses of that mechanism does not affect the claimed structure.

Dependent Claim 7, claims *the mechanism according to claim 1 wherein said continuous spring includes coils sized for causing adjacent coils to abut one another upon assembly of the cylindrical body within the bore in order to increase electromagnetic shielding, electrical conductivity, thermal dissipation and environmental sealing between the cylindrical body and the housing*. Defendant claims that because this claim refers back to the preamble reference to applications for the mechanism, using comparative language ("in order to increase"), the preamble is essential to understand this limitation. The Court disagrees. Claim 7 provides a further limitation of the mechanism described in Claim 1 with regard to the structure of the claimed continuous spring. The inclusion of language describing the purpose for the added element is understandable without reference to the preamble of Claim 1. In other words if the preamble phrase in Claim 1, was deleted, dependent Claim 7 would still be complete and understandable.

Based on review of the entirety of the patent, the Court concludes that the preamble of Claim 1 is statement of purpose or intended use and is not a limitation and does not require construction.

**Generally parallel side walls**

The parties agree that parallel has its ordinary meaning, and that generally means “for the most part.” The Court defines **generally parallel side walls** as

Side walls, the surfaces of which, for the most part, extend in the same direction, equidistant at all points.

**Groove means, disposed in an inside surface of said bore, for receiving the protruding spring portion and for enabling assembly of the cylindrical body within the bore when the cylindrical body and housing are moved in one direction with respect to one another**

Claim 1 uses the word “means” for defining a groove in the inside surface of the bore in the housing. Both parties agree that rules of section 112(6) apply. The function of the groove means inside the bore in the housing is to receive the protruding portion of the spring disposed in the groove means of the cylindrical body and to enable assembly of the body in the opening of the housing when the cylindrical body and housing are moved in one direction.

The Court looks to the specification for the corresponding structure(s). The patent figures illustrate and the written descriptions identify this groove means as a structure inside the surface of the bore in the housing for receiving the protruding spring portion and enabling assembly of the cylindrical body within the opening, with two side walls and a bottom wall. See Figs. 1-2, and Col. 4, lines 32-41.

Court adopts the parties’ joint construction of **groove means, disposed in an inside surface of said bore, for receiving the protruding spring portion and for enabling assembly of the cylindrical body within the bore when the cylindrical body and housing are moved in one direction with respect to one another as**

An indentation with two side walls and a bottom located there between having a width and a depth, disposed in an inside surface of the bore in the housing, and equivalents thereof.

**Means, defining a tapered bottom in said circumferential groove means, for preventing the spring from turning past a vertical line when the cylindrical body and housing are moved in another direction with respect to one another in order to prevent disassembly of the cylindrical body and housing**

Claim 1 uses the word “means” for defining the bottom of the groove means. Both parties agree that rules of section 112(6) apply. The function of the tapering means is to provide a groove bottom such that the spring disposed in the groove will not turn past a vertical line in the groove when pressure is applied from one direction so as to prevent the disassembly of the body and the housing.

The Court looks to the specification for the corresponding structure(s). The patent figures illustrate and the written descriptions identify a bottom wall with respect to the side walls that is angled, such that the depth of the groove is not uniform between the walls. See Figs. 1-3, and 5 and Col. 4, lines 43-48, 62-67; Figs. 8-12, and Col. 5, lines 24-27, 32-36, 39-55.

The Court finds that section 112(6) applies and **means, defining a tapered bottom in said circumferential groove, for preventing the spring from turning past a vertical line when the cylindrical body and housing are moved in another direction with respect to one another in order to prevent disassembly of the cylindrical body and housing** is defined as

A bottom wall of the groove in which the spring is disposed, such that the bottom wall with respect to the side walls of the groove is angled, such that the depth of the groove is not uniform between the walls, and equivalents thereof.

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Claim 2. *The mechanism according to claim 1 wherein the circumferential groove means has a groove width which is smaller than a **coil height** of the spring.*

Terms for Construction

**Coil height**

Court adopts the parties' joint construction of **coil height** as  
The length of the short dimension of the spring.

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Claim 10. *A connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing, the mechanism comprising:*

*a housing including a bore therein having a circumferential groove means with generally parallel side walls;*

*a continuous coil spring disposed in said circumferential groove means with a portion thereof protruding from said circumferential groove means;*

*a cylindrical body sized for insertion into said bore and groove means, disposed on an outside surface of said cylindrical body, for receiving the protruding spring portion and for enabling assembly of the cylindrical body within the bore when the cylindrical body and housing are moved in one direction with respect to one another; and*

*means, defining a tapered bottom in said circumferential groove means, for preventing the spring from turning past a vertical line when the cylindrical body and housing are moved in another direction with respect to one another in order to prevent disassembly of the cylindrical body and housing.*

#### Terms for Construction

**A connect/disconnect, lock/unlock and hold mechanism for mechanical, electromagnetic shielding, electrical conductivity, and thermal dissipation coupling with environmental sealing**

For the reasons set forth above with respect to Claim 1, the Court concludes that the preamble of Claim 10 is statement of purpose or intended use and is not a limitation and does not require construction.

#### **Generally parallel**

The parties agree that parallel has its ordinary meaning, and that generally means “for the most part.” The Court defines **generally parallel** as

Side walls, the surfaces of which, for the most part, extend in the same direction, equidistant at all points.

**Groove means, disposed on an outside surface of said cylindrical body, for receiving the protruding spring portion and for enabling assembly of the cylindrical body within the bore when the cylindrical body and housing are moved in one direction with respect to one another**

Claim 10 uses the word “means” for defining a groove on the outside surface of the cylindrical body. Both parties agree that rules of section 112(6) apply. The function of the groove means on



the outside of the cylindrical body is to receive the protruding portion of the spring disposed in the groove means in the bore in the housing and to enable assembly of the cylindrical body in the bore in the housing when the cylindrical body and housing are moved in one direction.

The Court looks to the specification for the corresponding structure. The patent figures illustrate and the written description identify this groove means as an indentation on the surface of the cylindrical body with two side walls and a bottom wall for receiving the protruding spring portion and enabling assembly of the body within the opening. See Figs. 6-7, and Col.5, lines 4-20.

The Court finds that section 112(6) applies and adopts the parties' joint construction of **groove means, disposed on an outside surface of said cylindrical body, for receiving the protruding spring portion and for enabling assembly of the cylindrical body within the bore when the cylindrical body and housing are moved in one direction with respect to one another as**

An indentation with two side walls and a bottom located there between having a width and a depth, disposed in an outside surface of the cylindrical body, and equivalents thereof.

**Means, defining a tapered bottom in said circumferential groove means, for preventing the spring from turning past a vertical line when the cylindrical body and housing are moved in another direction with respect to one another in order to prevent disassembly of the cylindrical body and housing**

Claim 10 uses the word "means" for defining the bottom of the circumferential groove means in the bore in the housing. Both parties agree that rules of section 112(6) apply. The function of the tapering means is to provide a groove bottom such that the spring disposed in the groove will not turn past a vertical line in the groove when pressure is applied from one direction so as to prevent the disassembly of the cylindrical body and the housing.

The Court looks to the specification for the corresponding structure(s). The patent figures illustrate and the written descriptions identify a bottom wall with respect to the side walls of the groove that is at an angle, such that the depth of the groove is not uniform between the walls. See Figs. 6-7, and Col. 5, lines 16-23.

The Court finds that section 112(6) applies and **means, defining a tapered bottom in said circumferential groove means, for preventing the spring from turning past a vertical line when the cylindrical body and housing are moved in another direction with respect to one another in order to prevent disassembly of the cylindrical body and housing** is defined as

A bottom wall of the groove in which the spring is disposed, such that the bottom with respect to the side walls of the groove is angled, such that the depth of the groove is not uniform between the walls, and equivalents thereof.

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Claim 11. *The mechanism according to claim 10 wherein the circumferential groove means has a groove width which is smaller than a **coil height** of the spring.*

Terms for Construction

**Coil height**

Court adopts the parties' joint construction of **coil height** as  
The length of the short dimension of the spring.